IGEL Universal Desktop Converter 2

User Manual

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IGEL Universal Desktop Converter 2

About this manual

This document describes the procedure for installing and using the IGEL Universal Desktop Converter 2 (UCD2) based on Version 5.06.110.

This manual is divided into the following sections:

Installing firmware and licenses **(page 5)**	How to install the firmware and the associated licenses.
Deployment **(page 10)**	How to distribute the firmware to various computers.
Licensing overview **(page 22)**	How to license the firmware.

Additional Topics

In addition to the content of this manual you can find further instructions on eDocs in following best practice topics:

- Deployment Appliance
- Importing Licenses

Formatting and meanings

The following formatting is used in the document:

Hyperlink	Internal or external links
Proper names	Proper names of products, firms etc.
GUI text	Items of text from the user interface
Menu→Path	(Context) menu paths in systems and programs
`Entry`	Program code or system entries
Keyboard	Commands that are entered using the keyboard

Note regarding operation

Warning: Important note which must be observed

1. General Information

The IGEL Universal Desktop Converter Software (UDC2) allows the migration of existing PC and thin client hardware to a homogeneous IGEL Universal Desktop thin client infrastructure.

Essentially, you have two options for installing the firmware on your devices:

- *locally on the device itself* (page 5)
  - via a UCD stick purchased from IGEL Technology

    or
  - via a USB stick that you set up yourself by downloading the UDC2 stick software
- *via remote administration* (page 10)

In both cases, you will need

- the IGEL Universal Desktop Converter software
- the IGEL Universal Desktop OS 2 firmware
- the associated licenses.

You will receive the complete package when you purchase the UDC stick from IGEL Technology. The stick contains:

- the IGEL Universal Desktop Converter (UDC2) software
- the IGEL Universal Desktop OS 2 firmware
- a smartcard with the licenses ordered
- this installation manual
- the IGEL Universal Desktop manual (Linux)
- the IGEL Universal Management Suite (Windows) with documentation

In order to use IGEL Universal Desktop OS 2, you will need the appropriate licenses. Licenses for the previous version of the IGEL Universal Desktop OS are no longer valid for the current version. You will need a new smartcard or new licenses issued by IGEL Technology.

2. Installing firmware and licenses

In order to install the IGEL Universal Desktop OS 2 firmware, you must make a number of preparations:

2.1. Preparing

1. Remove the slot cover on the UDC stick and insert the smartcard with the licenses.
2. Change the BIOS boot order of your target device so that it boots from USB.

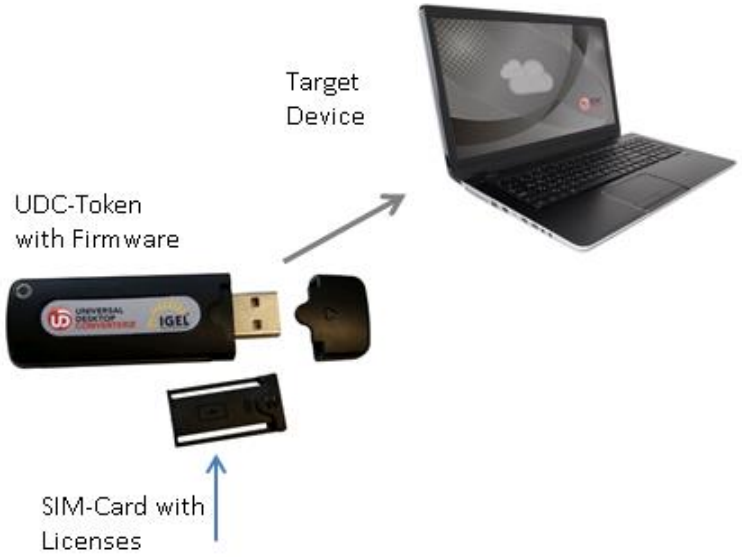


Figure 1: Preparing the installation

3. Insert the UDC stick into the USB socket on your target device.
4. Start the system.

   The target device boots from the UDC stick and the boot menu opens:

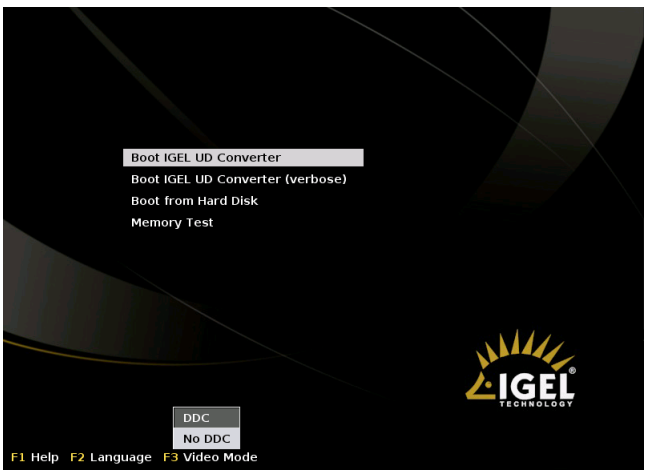


Figure 2: UDC boot menu

The following **options** are available to you in the boot menu:

Boot IGEL UD Converter	Starts the firmware installer image. Autostart after 1 minute
Boot Converter (verbose)	Shows messages during the boot process
Boot from Hard disk	Boots from the hard disk
Memory Test	Performs a memory test

The following **function buttons** are available to you in the boot menu:

F1	Open help for the selected option
F2	Select language for the current menu
F3	Change video mode (DDC setting) - the DDC mode is enabled by default

DDC is enabled by default when the Universal Desktop OS 2 boots. If necessary, you can change this option again via the IGEL Universal Management Suite or in the local setup.

2.2. Installing

1. Boot the Universal Desktop Converter in the standard mode or in verbose mode.
2. Select a **language** for the installation and confirm the **license information**.
3. Select a target drive on which you would like to install the Universal Desktop OS: internal, external HDD, flash or USB drive.

   All existing data on the target drive will be deleted during installation.

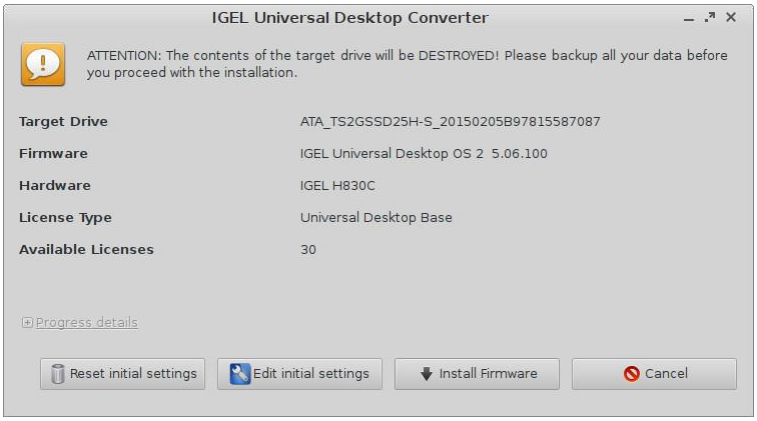


Figure 3: Security check

4. Click **Edit initial settings** to cofigure the settings which will be applied to the thin client at installation time. These settings are saved on the UDC stick and will be applied to thin clients in subsequent installations.

   It is also possible to roll out custom files like certificates at installation time. To do so, copy the files to a location inside the folder "wfs_template" on the UDC stick, just as they should be placed in the folder "/wfs" on the thin client.

5. Click **Reset initial settings** to remove any custom configuration and restore the installation of the factory default values.

6. Click on **Install Firmware** to begin the installation process.

   In case the target drive is not large enough for installation of the whole firmware, a dialog window will open. The physical disk size and the estimated firmware size are shown. Deselect features in the list of optional features until the remaining parts will fit onto the device.

IGEL Universal Desktop Converter
The firmware does not fit onto the target device entirely. Deselect unneeded features until the remaining parts will fit onto the device.
Citrix XenDesktop Appliance Mode (320.0 KB)
Ericom PowerTerm WebConnect (192.0 KB)
vWorkspace Client (15.6 MB)
VMware Horizon (28.8 MB)
Voice over IP (Ekiga) (4.2 MB)
VirtualBridges VERDE (6.9 MB)
2X Client (9.2 MB)
ThinLinc (7.0 MB)
Red Hat Enterprise Virtualization (1.2 MB)
Disk size 486.0 MB, firmware size 751.8 MB
Install Firmware
Cancel

7. Click **Install Firmware** again.

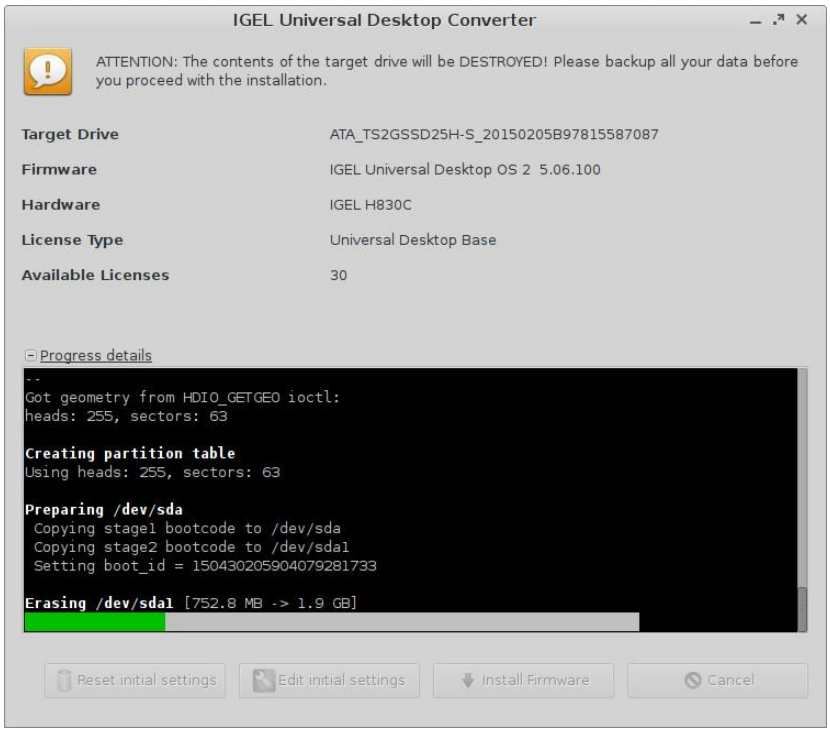


Figure 4: Installation process

8. Shut down the system once the installation is complete.
9. Remove the UDC stick and reboot with the target drive (IGEL Linux).

Remember to change back the BIOS boot order.

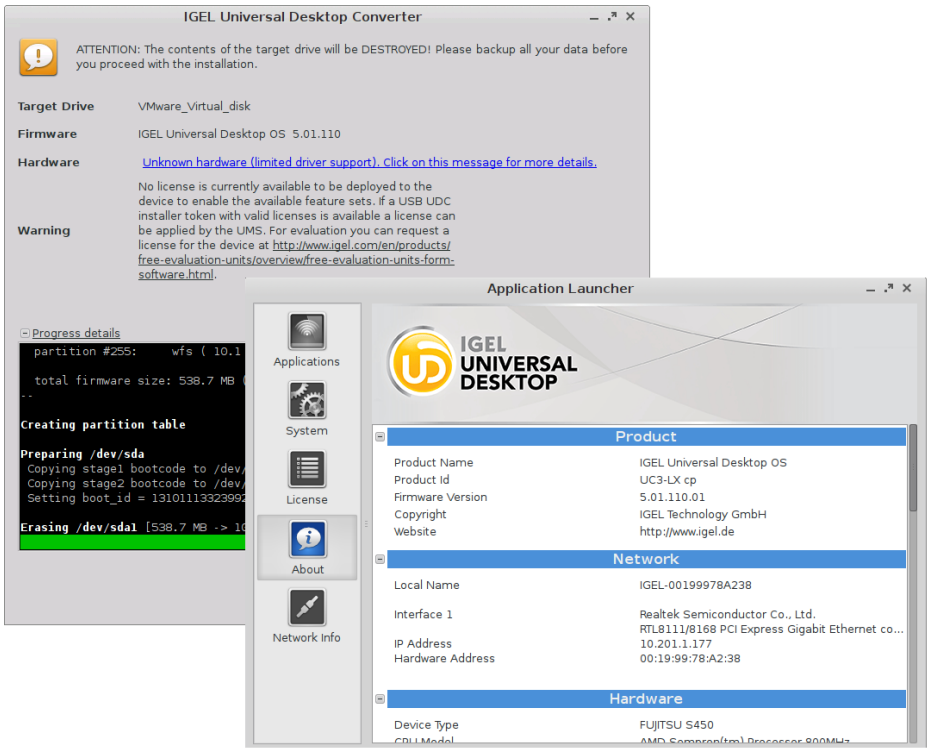


Figure 5: Restarting with target drive

Your device will now run with IGEL Universal Desktop OS 2. If you have installed the firmware using the IGEL UDC stick with smartcard in the manner described, your device will now be equipped with up-to-date licenses and can be registered in the IGEL UMS. For more information about licenses, *see* (page 22).

Back up all license files from `[USB stick]:\licenses` for later use. You should back up all license filed before formating the USB stick, especially if you use `UDC2Stick.exe`.

Further information about the system and the IGEL Universal Management Suite can be found in the documentation on the UDC stick or in the IGEL Knowledge Base `edocs.igel.com`.

2.3. Emergency procedure (ISO image)

If the system does not boot from the UDC stick, you can use an emergency procedure in order to install the IGEL Universal Desktop OS 2. You will find the relevant ISO image on the UDC stick.

➢ Use the ISO file to create a CD and then boot the system from the CD.

The UDC stick with the licenses must also be connected because the ISO image provides only the UDC2 software and no licenses. Alternatively, after installation you can apply the licenses to the target devices via the IGEL UMS or issue them at the thin client, *see* (page 23).

The installation process begins, see *Installing* (page 6).

3. Deployment

There are various ways in which you can install the IGEL Universal Desktop OS 2 on a number of computers.

Duplicating the UDC stick using UDC2Stick.exe (page 10)	Distribute the firmware to all computers with the help of additional USB sticks.
Deployment Appliance (page 12)	Roll out the firmware centrally using a deployment appliance.
Deployment with Microsoft RIS (page 19)	Use the Remote Installation Services (RIS) and the PXE boot mechanism to distribute the software to the target devices via remote administration.

3.1. Duplicating UDC stick

- Copy the UDC stick with the installer image to a standard USB stick and install the firmware on your target devices with these additional copies.
- Distribute the licenses via the IGEL Universal Management Suite (page 23).

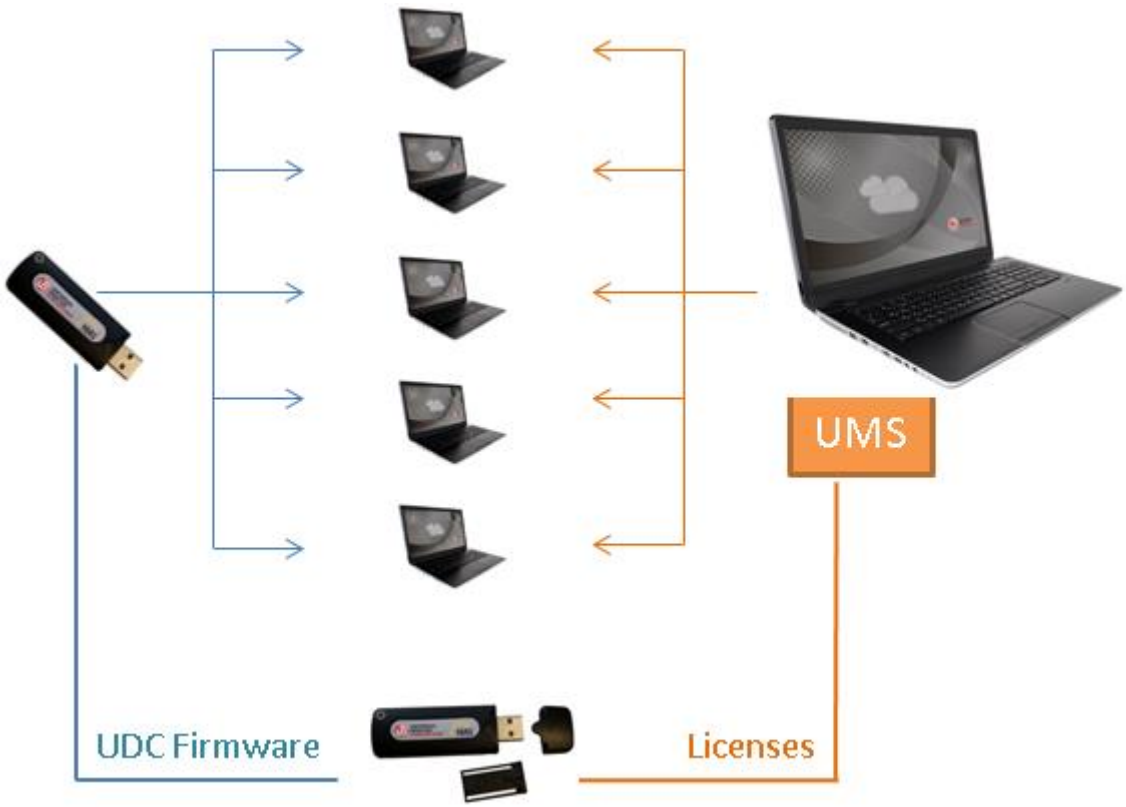


Figure 6: Duplicating UDC2 stick

3.1.1. Requirements

- The `UDC2Stick.exe` duplication tool can be found on the UDC stick under **Software & Documentation/Software/UDC2Stick/**.
- The software runs on the following Windows systems:

  Windows Vista, Windows 7 and Windows 2008 Server.
- The USB target drive must have a capacity of at least 1 GB.

➢ Launch the program as an administrator.

3.1.2. Duplicating

To duplicate the firmware, proceed as follows:

➢ Copy the firmware onto a USB stick from

- the IGEL UDC stick

  or
- our download server `www.myigel.biz`

Copying firmware from the UDC stick

1. Connect both USB sticks: the IGEL UDC stick and the target USB stick.
2. Launch `UDC2Stick.exe` from the following directory:

   Software & Documentation/Software/UDC2Stick/
3. Select the USB stick as the **Destination**.
4. Enable **Format with FAT32 and Make Bootable**.
5. Select **Quick Format** if you are using a target drive that is to be formated quickly.

   Optionally, you can copy the **Software & Documentation** files to your target drive too.
6. Click on **Duplicate Source to Destination USB Stick**.

   Your target device will be formated using the FAT32 file system and made bootable.
   All relevant files will be copied from the source to the target device.
7. Close the program once the process is complete or copy the firmware to another USB stick.

Copying firmware from the download server

1. Download the current `UDC2Stick.zip` file from the IGEL download server `www.myigel.biz` under IGEL_UNIVERSAL_DESKTOP_CONVERTER/UDC2_Stick_V5/.
2. Unzip all the files and begin the procedure – in this case without a UDC stick – in order to create a bootable USB stick with IGEL Universal Desktop OS 2.

If you download the firmware from the IGEL server, you will receive the UDC2 software, but with no licenses. These must be ordered separately and distributed to the target devices via the IGEL UMS, *see* (page 23).

3.2. Deployment Appliance

Ideally, the Universal Desktop OS 2 firmware should be distributed via the deployment appliance if a large number of target devices are to be converted and transferring the firmware to each one via USB stick would involve too much work.

- Define any computer as the administrator computer. What is important is that this computer is in the same network as the computers that are to be converted.
- Load onto this computer:
  - either VMware Workstation, VMware Player or Oracle VM VirtualBox
  - the IGEL OVA file with the PXE-Server-VM
  - the UDC2 software
- You can now roll out firmware to all computers within your network from this administrator computer.

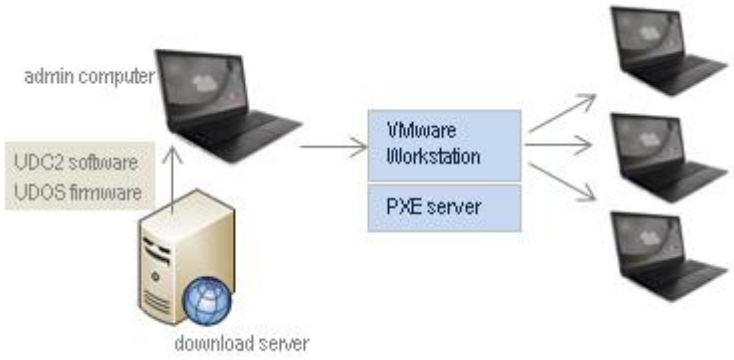


Figure 7: Deployment Appliance

The PXE server, also known as the appliance server, is configured via a web interface. The actual administration, the setup and the firmware rollout are carried out by the PXE server itself.

3.2.1. Importing OVA file

Download the Open Virtualization Appliance (OVA) file from our download server and import it into the virtualization environment. We show you the procedure here using the VMware Workstation Version 10 as an example:

1. Open the browser on the administrator computer.
2. Go to IGEL_UDC_DEPLOYMENT_APPLIANCE under `http://myigel.biz`.
3. Download the `ova` file to the administrator computer.
4. In the VMware Workstation, click on **File→Open** in order to open the `IGEL_UDC_Deployment_Appliance_[Version].ova` file.
5. The **Import Virtual Machine** window opens:

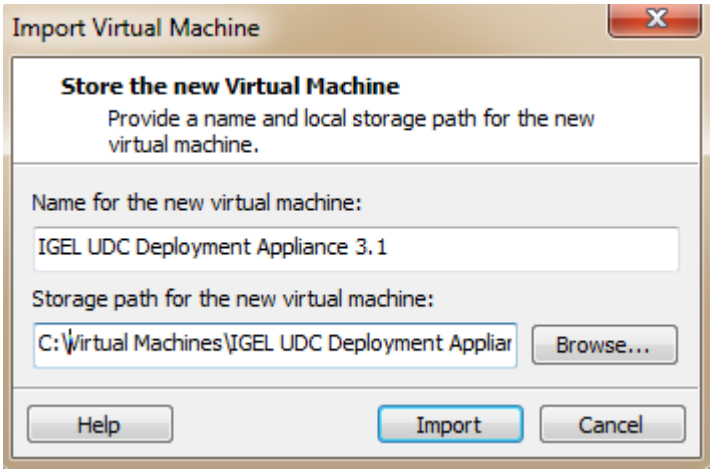

Import Virtual Machine
Store the new Virtual Machine
Provide a name and local storage path for the new virtual machine.
Name for the new virtual machine:
IGEL UDC Deployment Appliance 3.1
Storage path for the new virtual machine:
C:\Virtual Machines\IGEL UDC Deployment Appliar
Browse...
Help
Import
Cancel

Figure 8: VMware Workstation 10 import wizard

6. Give the name and location of the virtual machine.
7. Click on **Import** to begin the import process.
8. Follow the wizard through the import process.
9. Check the network settings for connectivity, **Bridged** must be set.

3.2.2. Configuring PXE-Server-VM

1. Switch on the virtual machine and launch the VMware Console in order to configure the settings.

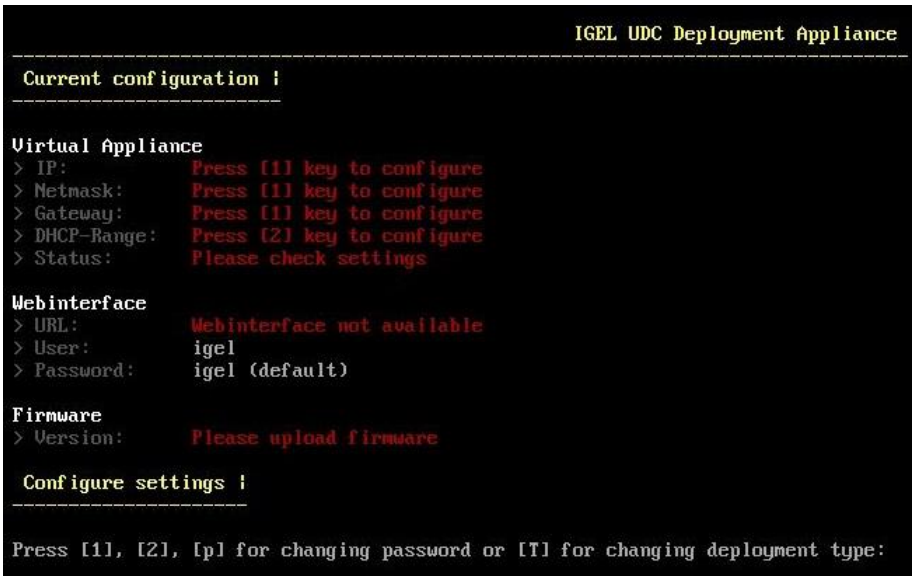

IGEL UDC Deployment Appliance
Current configuration :
Virtual Appliance
> IP: Press [1] key to configure
> Netmask: Press [1] key to configure
> Gateway: Press [1] key to configure
> DHCP-Range: Press [2] key to configure
> Status: Please check settings
Webinterface
> URL: Webinterface not available
> User: igel
> Password: igel (default)
Firmware
> Version: Please upload firmware
Configure settings :
Press [1], [2], [p] for changing password or [T] for changing deployment type:

Figure 9: VMware Console

These shortkeys can be used to perform the following actions:

1	Configure network
2	Set DHCP range
P	Change password for the web interface
Y	Apply settings
Shift + T	Confirm change in the deployment type

2. Press 1 to configure the **virtual appliance**.

3. Give the **IP address**, **netmask** and **gateway IP**.

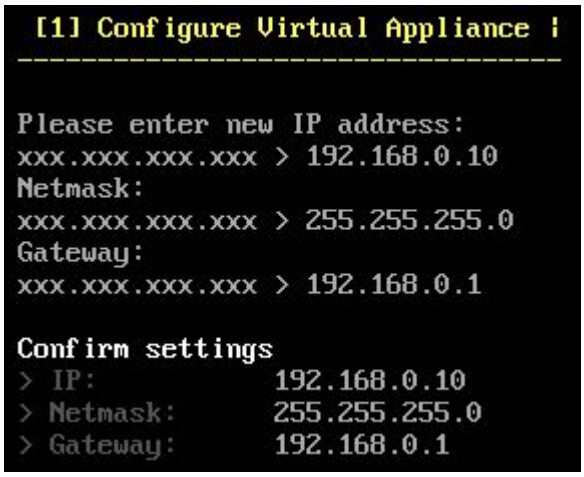


Figure 10: Configuring virtual appliance

4. Confirm your settings by pressing Y.
5. Press 2 to set up the DHCP range for the server.
6. Enter the **first IP address**, **last IP address** and **lease time**.
7. Confirm your settings by pressing Y.

   The DHCP server is enabled and is ready to assign an IP address from the address range to target devices.

3.2.3. Uploading firmware

1. Launch the browser and bring up the web frontend of the PXE server via its IP address:

   `http://[IP address of the server]`.

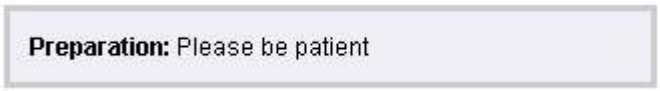
   The default password is: `igel`. After the dial-up, change the *password* (page 17).

2. Upload the `UDC2Stick_[version].zip` file to the PXE server.

Figure 11: Selecting firmware

Warning: The upload procedure can take a few minutes! Wait until the system reports that the process is complete and the firmware was loaded successfully.

Wait while this is shown:



Wait until this message appears:

Only now was the upload successful and the firmware prepared for the rollout.

Bear in mind the effects that the new DHCP/PXE server can have on your network and the connected devices: Each computer that boots the image can install IGEL Universal Desktop OS 2. All locally saved data will be lost during the installation.

Ensure that no other DHCP servers are running within the network, otherwise this may result in malfunctions.

IGEL UDC will now be deployed as the boot image for each computer that boots with the PXE option.

3.2.4. Changing password

After dialing up using the default password `igel`, you should change the password:

1. Press P .
2. Enter the new password and confirm it.

   Your new password is secret and will not be displayed in the console.

Figure 12: The changed password will not be shown.

3.2.5. Unattended installation

Normally, you would distribute the firmware to the individual clients during an **attended installation**. This would mean that you need to target each individual client manually.

Instead, you can enable the **unattended installation** function:

➢ Press Shift + T to change the deployment type.

With an unattended installation, the PXE server rolls out the firmware to every client in the same network. This is very useful if you would like to convert every computer within the network.

Please note: The unattended installation function starts the installation automatically when the computer with the IGEL UDC image is started. Each device that boots with this image will install the IGEL Universal Desktop OS 2 firmware without further notice. In the process, all existing data stored locally will be deleted.

In order to avoid the loss of unsecured data, an additional security check will ask you to confirm that you really do want to change the deployment type.

[T] Configure deployment type
Confirm settings
> Warning!
Are you sure you want to change deployment type
from attended installation (recommendation)
to unattended installation?
Please press [y] to apply change or any key:

Figure 13: Changing deployment type

➢ Press [Y] to confirm the change.

3.2.6. Installing the UD OS

You have chosen an **unattended installation**.

Ensure that the BIOS of your target device is set to network installation. Details of further system requirements can be found in the official UDC data sheet available at `http://www.igel.com`.

➢ Boot your target device with the IGEL UDC image.

The UDC installation process will begin after a 10 second time out.

If the procedure is successful, IGEL Universal Desktop OS 2 will be installed on your device.

Now import the *licenses* (page 22).

3.3. Deployment with Microsoft RIS

In order to manage the installation of the Universal Desktop OS 2 centrally, you can also use Microsoft's Remote Installation Services (RIS) with PXE boot mechanism. This allows you to install the software on your target devices via remote access.

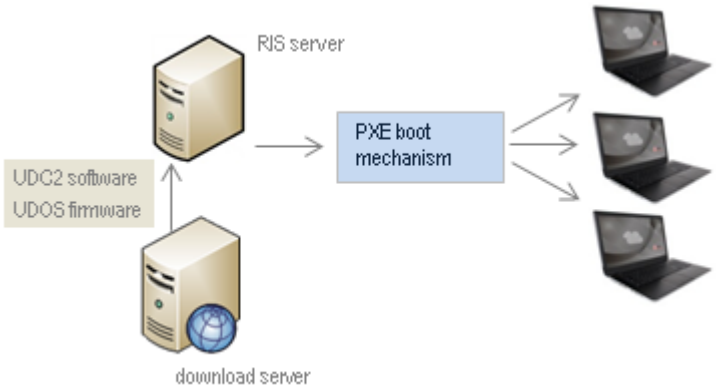


Figure 14: Distribution via RIS deployment

3.3.1. Preparing

Download software and firmware to the server:

- Download the UDC boot image `udc_[version]_ris.zip` from the IGEL download server `http://myigel.biz` under **IGEL_Universal_Desktop_Converter/ris_deployment/UDC2_V5**.
- Download the firmware image `os_[version]_public.zip` from the IGEL download server `http://myigel.biz` under **IGEL_Universal_Desktop_Converter/updates/UDC2_V5**.

Unzip the software and firmware on the server:

- Unzip the `udc_[version]_ris.zip` file to the image directory of your RIS server.

  The new image will be saved in the **igel_udc** path.

➢ Unzip the `os_[version]_public.zip file` to the firmware directory of the IGEL UDC as shown in the screenshot:

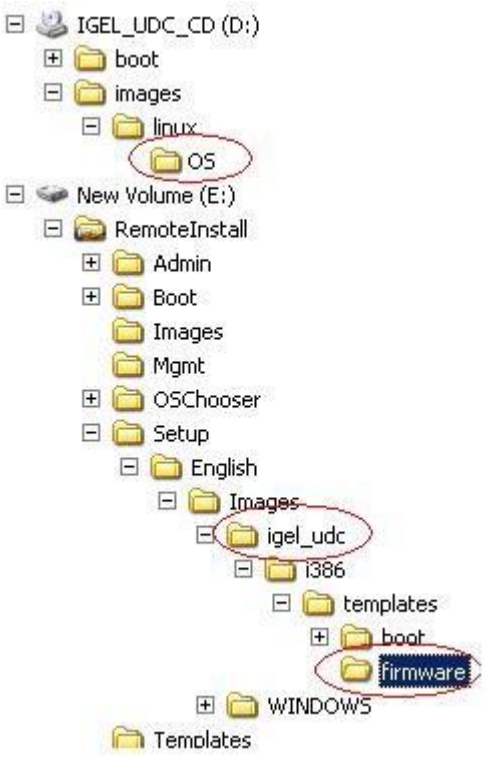


Figure 15: Firmware directory

3.3.2. Configuring

IP address

➢ Open the `default` file in the path: `igel_udc\i386\templates\boot\pxelinux.cfg\`

➢ Set the IP address of the RIS server in the following line (both sections – Label Linux and Label Verbose):

```
udc_url=tftp://[IP address]/setup/english/images/↵
   igel_udc/i386/templates/firmware/os.inf
```

Unattended installation

This configuration file provides the parameter `udc_unattended` which allows the installation of IGEL Universal Desktop OS 2 to begin automatically during the system boot. The default setting for the installation process is `udc_unattended=false`, i.e. the installation must be confirmed on the remote device or target device.

If `udc_unattended=true` is set, the installation will begin automatically as soon as the device with the IGEL UDC image is booted. A device that boots with the image will install IGEL Universal Desktop OS 2 without further notice. All locally saved data will be deleted.

➢ Restart your RIS.

IGEL UDC2 is available as a boot image to each device that boots with the PXE option.

Figure 16: Windows deployment services

3.3.3. Installing and licensing

If a target device with the IGEL UDC2 image boots and the **unattended installation** mode is set, the UDC2 installation process will be shown briefly and will then begin automatically:

Figure 17: IGEL UDC boot mask

To license the firmware, use the IGEL Universal Management Suite licensing service as described in the chapter *Licensing with the Universal Management Suite (UMS)* (page 23).

4. Licensing overview

The Universal Desktop OS 2 needs its own licenses! The licenses for the previous IGEL Universal Desktop OS are not valid for the new firmware. Conversely, the new licenses are not valid for the old firmware.

> The licenses are linked to the MAC address of the target system and cannot be transferred to another system.

The new licenses can be found on the smartcard for the UDC stick. If you have downloaded the firmware from the Internet or distributed it via the UDC2Stick.exe file, the licenses for your target computers must be ordered from IGEL Technology. *More information is available here* (page 23).

> However, the previous licenses will not lose their validity. This means that you can install the previous version of the current firmware at any time and continue working with the previous licenses.

You have the following options for installing and licensing the Universal Desktop OS 2 firmware on your target devices:

	Installing firmware	Licensing
A	Directly on the target device via UDC stick	Via smartcard in the UDC stick
B	Directly on the target device via USB stick with UCD2Stick.exe	Distributing a license from the smartcard or ready-to-use licenses from IGEL Technology via the UMS
C	Distributing via deployment appliance	
D	Distributing via RIS deployment	

If you reinstall the UDC firmware via the UDC stick, you will merely need to insert the smartcard into the UDC stick. During the installation, a license file for your hardware will be generated on the UDC stick with the help of a license from the smartcard. *More information is available here* (page 6).

In all of the cases described above, you can distribute the licenses via the IGEL Universal Management Suite.

4.1. Licensing with the Universal Management Suite (UMS)

Requirements:

- The IGEL Universal Desktop OS 2 must already be installed on the target devices.
- The target devices are registered in the UMS.

To order licenses from IGEL Technology and distribute them to your target devices via the UMS:

➢ Find out which clients require the new license.

➢ Send the MAC addresses of the relevant clients to IGEL Technology GmbH.

➢ IGEL will provide you with the corresponding licenses, prepared in such a way that they can be rolled out automatically via the UMS.

Proceed as follows:

1. Click on **System→Manage Licenses** in the UMS Console.

   The **Manage Licenses** window opens:

Figure 18: Managing licenses

2. Click on **Export MAC List** in order to export MAC addresses to a `csv` file. The following options will help you to filter your clients:

What do you want to export ?
Export all unlicensed MAC addresses
Export all registered MAC addresses.
Export all MAC addresses from a view

Figure 19: Filtering MAC addresses

3. Send the `csv` file to IGEL Technology GmbH in order to request license files for the selected devices. IGEL Technology will send you the new license file for the relevant MAC addresses.
4. Click on **Add (+)** in the **Manage Licenses** window in order to upload the license file.

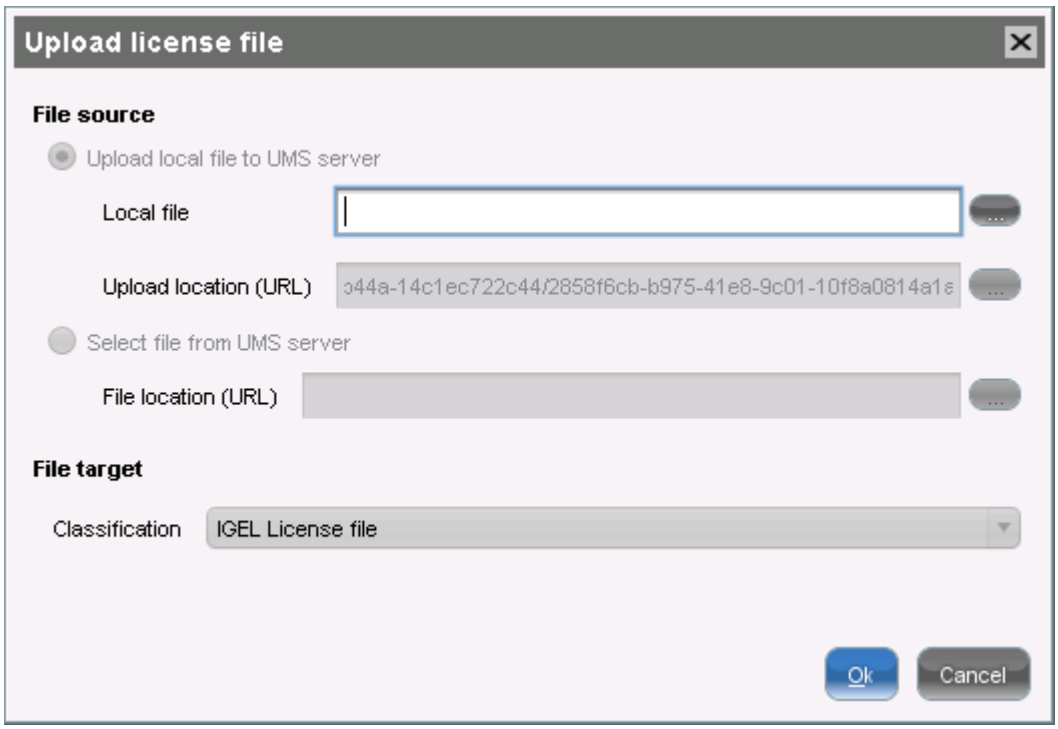


Figure 20: Uploading license file

5. Search through your directories for the `lic` file.
6. Click on **OK** to upload the new file to the UMS server.

   When you restart the target device, it will receive the new license from the server.

4.2. Licensing via smartcard and UMS

Requirements:

- The IGEL Universal Desktop OS 2 must already be installed on the target devices.
- The target devices are registered in the UMS.
- The driver for the smartcard reader is installed – it can be found on the UDC stick.

To generate licenses from the smartcard, proceed as follows:

1. Insert the smartcard with the licenses into the UDC stick.
2. Connect the UDC stick to the device on which the UMS Console runs.
3. Click on **System→Manage Licenses** in the UMS Console.

   The **Manage Licenses** window opens:

Figure 21: Managing licenses

4. Click on **Issue License from the Smartcard** and confirm your action.

   A list of available licenses is available under **License Information**.
   The available target devices are listed under **Thin Clients**.
5. Select the devices for which you require a license.
6. Click on **Issue Licenses**.

   The licenses will be generated by the UDC stick.

7. Start the devices twice in order to enable the licenses and the associated functions.

   The product ID indicates whether the licensing has worked.

A license is saved at the following three locations:

- On the target device
- In the UMS
- On the UDC stick

If you would like to delete the license for whatever reason, you must delete it in all three locations.

5. Upgrading from UD OS to UD OS 2

When updating from your previous Universal Desktop firmware to UD OS 2 (version 5.x), you may need to perform the update procedure twice:

- Updating the firmware of your devices to version 4.13.100 or higher.
- Upgrading to UD OS 2.

From firmware version 4.13.100 you can upgrade directly to UD OS 2.

> The upgrade from firmware version 4.x to 5.x must be performed manually. The automatic Universal Firmware Update does not work in this case.

Preparation

First of all, you need to order the new UD OS 2 licenses:

- Find out which clients require the new license.

  Send the MAC addresses of the relevant clients to IGEL Technology GmbH. For further information see *Licensing with the Universal Management Suite* (page 23).

The licenses for the previous IGEL Universal Desktop OS are not valid for the new firmware. However, they will not lose their validity. This means that you can install the previous version of the firmware at any time and continue working with the previous licenses.

Manual update procedure

Perform the following steps twice - once in order to update your old system and then once in order to upgrade your system to UD OS 2:

1. Go to `www.myigel.biz` and download the desired firmware image from the IGEL server.
2. Unzip the ZIP file.
3. Save all files in the directory provided either on your local FTP/HTTP server or on a drive which is accessible from the client (e.g. a USB stick, NFS share etc.).
4. Click **System→Update→Firmware Update** under **Configuration** in the IGEL setup.
5. Configure the necessary settings.
6. Save your changes and click **Update firmware**.

   The update will now proceed automatically.

For further information, see the **System settings→Update** section in the IGEL UDLX user manual.

See also our Best Practice documents concerning the IGEL Linux firmware update at the *IGEL Knowledge Base http://edocs.igel.com*.

Some of our support FAQs also deal with the firmware update procedure.

6. Licensing at the thin client via smartcard

Prerequisite

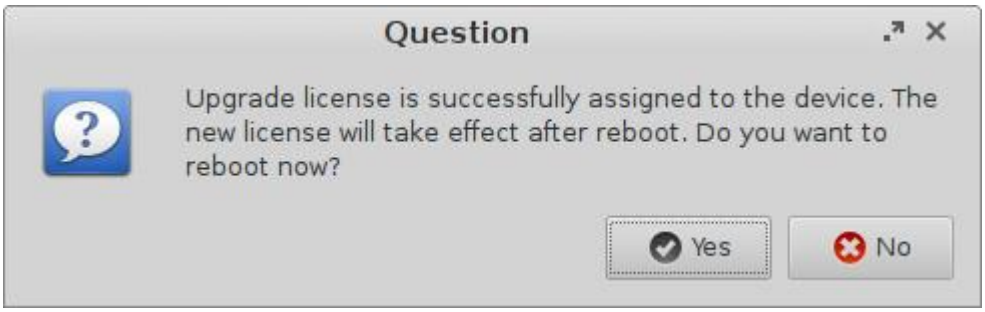
- The IGEL Universal Desktop Converter OS 2 is already installed at the target device.
- UDC stick with SIM card is available.

Generating licenses from smartcard:

1. Put the SIM card with the licenses into the UDC stick.
2. Connect the UDC stick to the thin client.
3. Click **Starting menu>System>Lizense Upgrade**.
4. The mask **IGEL License Upgrade** opens.

Figure 22: License Upgrade

5. Click **Apply**.
6. The window **Question** opens.


Question
Upgrade license is successfully assigned to the device. The new license will take effect after reboot. Do you want to reboot now?
Yes
No

7. Remove the USB stick.
8. Click **Yes** to reboot the thin client.

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